January 31, 2005

DECISION AND ORDER
OF THE DEPARTMENT OF ENERGY

Appeal

Name of Petitioner: Chevron USA Inc.

Date of Filing: June 15, 2003

Case Number: TEA-0001

Chevron USA Inc. (ChevronTexaco) appeals a determination by the Principal Deputy Assistant Secretary for Fossil Energy (PDASFE) of the Department of Energy (DOE). *See Decision Finalizing Participating Percentages in Production from the Stevens Zone, Naval Petroleum Reserve No. 1* (June 2002). The matter in controversy has been fully briefed. Oral argument was held in Washington, DC on October 13, 2004. As explained below, we have determined that the appeal should be granted in part.

I. BACKGROUND

This case concerns the Elk Hills oil field, also referred to as Naval Petroleum Reserve No. 1. A detailed history of the Reserve is set forth in United States v. Standard Oil of Cal., 545 F.2d 624 (9th Cir. 1976). For the purposes of this decision, a brief history will suffice.

Congress established the Reserve in 1912 to conserve oil for the national defense. The Reserve was comprised of parcels of land – some owned by the federal government and others owned by Standard Oil of California (Standard), now ChevronTexaco. Initially, the Navy had jurisdiction over the federal government's interest in the Reserve. In 1977, Congress transferred that jurisdiction to the newly established DOE.

In the early 1940s the federal government considered acquiring Standard's parcels through the right of eminent domain. As an alternative, the parties agreed, on November 20, 1942, to a unit plan contract that would govern the management of the Reserve. The Attorney General expressed concerns about the legality of the agreement, and the parties terminated the agreement and sought approval for a unit plan contract from Congress. Congress held

hearings and, in 1944, authorized a plan. *See* 10 U.S.C. § 7426. The parties executed a unit plan contract several days later (the UPC).

The UPC provided for ultimate Navy control over decisions related to the Unit. The UPC provided that each party's percentage participation in each commercially productive zone was equal to the acre-feet of hydrocarbons in that zone underlying its lands on November 20, 1942 divided by the acre-feet of hydrocarbons in that zone underlying the Unit on that date. The UPC established an "initial" percentage participation for each party for each zone. The UPC further provided for subsequent redeterminations of those percentages, which would be retroactive to November 20, 1942.

In 1995, Congress enacted legislation that required the DOE to sell the federal government's interest in the Reserve. National Defense Authorization Act for Fiscal Year 1996, Pub. L. No. 104-106 (NDA Act), §§ 3412-3416, 10 U.S.C. § 7420 note. The NDA Act required that the DOE and ChevronTexaco finalize their percentage participations. The NDA Act instructed the DOE to seek the recommendation of an independent engineer, which the DOE could accept or "use such other method to establish final equity interest in the reserve as the Secretary considers appropriate." 10 U.S.C. § 7420 note.

In anticipation of the sale, the DOE and ChevronTexaco established a process for the issuance and review of final equity determinations. *See* May 1997 Agreement Regarding Equity Redetermination Process (1997 Agreement). The parties agreed that the DOE's Assistant Secretary for Fossil Energy (ASFE) would issue a final equity determination for each zone in the Unit, and ChevronTexaco could appeal that determination to the OHA, which would render a final decision.

This case concerns the Stevens Zone, the largest producing zone in the Unit. The dispute concerns the factor used to convert the volumes of gas underlying the Unit to barrel-of-oil equivalents (BOEs) in order to determine each owner's percentage participation.

If the oil and gas were evenly distributed under the Unit, the parties would not need to convert gas to BOEs: a party's percentage participation for oil would be the same as its percentage participation for gas and that percentage could be used to divide Unit revenues. But the oil and gas were not evenly distributed: the DOE had a greater share of gas than of oil, and ChevronTexaco had the reverse. As a result, a single percentage

participation based on BOEs was needed. The use of BOEs required employing a factor to convert volumes of gas underlying the Unit to BOEs. A gas conversion factor that assigns little relative value to gas (fewer BOEs) is favorable to ChevronTexaco, and a conversion factor that assigns high relative value to gas (more BOEs) is favorable to the federal government.

In his provisional recommendation, the independent petroleum engineer (IPE) used relative thermal value to convert volumes of gas to BOEs. The IPE stated that he would have used relative current prices, but he believed that an agreement between the parties barred the use of relative price.

ChevronTexaco objected to the provisional recommendation, and the issue was referred to an independent legal adviser (ILA). The ILA opined that relative current prices should be used, and he sought the parties' agreement on what constituted current prices. The parties agreed to an average of prices over a twenty month period from June 1, 1996 to January 31, 1998 (1996-1998 prices). ChevronTexaco Brief, Ex. 30. Accordingly, the engineer's final recommendation used a conversion factor based on 1996-1998 prices of gas and oil. *See* NSAI [Netherland, Sewell & Associates, Inc., the IPE] Recommendation of Final Equity Participations for the Stevens Zone, Appendix A, Equity Calculations (March 2000). Both parties then filed comments with the ASFE.

In November 2001, the ASFE issued a preliminary decision. *See ASFE Preliminary Decision Finalizing Participation Percentages in Production from the Stevens Zone, Naval Petroleum Reserve No. 1,* A.R. No. 50 (the Preliminary Decision). The ASFE adopted a conversion factor which was the average of two conversion factors: one based on 1996-1998 prices and one based on thermal value. The ASFE found that the UPC did not require a particular conversion factor. Accordingly, the ASFE found that he had the discretion to choose a method so long as it was "fair and equitable to both parties" and "consistent with the UPC and sound oil field engineering principles." The ASFE determined that 1996-1998 prices and thermal values met that standard. He stated that current prices and thermal value were both used in financial reports to value reserves, that 1996-1998 prices were relatively close to the time of production, and that thermal values represent the inherent value of the substances and do not change over time. The parties filed comments, and, in June 2002, the PDASFE[1] issued a final

[1]The individual who issued the preliminary decision as the Acting ASFE issued the final decision as the PDASFE.

determination. *See Decision Finalizing Participating Percentages in Production from the Stevens Zone, Naval Petroleum Reserve No. 1* (June 18, 2002) (the Determination). The PDASFE adopted the conversion factor methodology set forth in the Preliminary Decision.

In June 2003, ChevronTexaco appealed the Determination. In its appeal, ChevronTexaco challenges the PDASFE's interpretation of the UPC. ChevronTexaco maintains that the plain language of the UPC requires that the conversion factor reflect the relative price of gas and oil as of November 20, 1942 and that the parties have contemporaneously construed the UPC in that way. In the alternative, ChevronTexaco argues that the UPC does not permit conversion but instead requires the calculation of separate percentage participations for gas and oil.

As indicated below, neither party's methodology complies with the UPC.

II. ANALYSIS

A. The UPC Requires That Percentage Participations Result in Each Party's Eventual Receipt of the Volumes of Recoverable Hydrocarbons Underlying its Lands in 1942

The UPC requires that percentage participations be based on the volume of the hydrocarbons underlying the parties' lands in 1942. Under Section 2(b) of the UPC, each party's percentage participation in a zone is based on the "acre-feet" of hydrocarbons in that zone underlying its lands relative to the "acre-feet" of such hydrocarbons underlying the Unit as a whole. Section 2(b) provides:

> **Navy and Standard shall, subject to the further provisions of this contract, share in the oil, gas, natural gasoline and associated hydrocarbons produced from each commercially productive zone underlying the Reserve upon the basis of the percentages representing the ratio between (1) the estimated acre-feet . . . of oil and/or gas bearing formations within the Estimated Limiting Line of Commercial Productivity for each such commercially productive zone as of November 20, 1942 and (2) the total of such estimated acre-feet within the Estimated Limiting Line of Commercial Productivity for such zone as of November 20, 1942. . . .**

UPC § 2(b) (emphasis added). Consistent with Section 2(b), Recital 6(d)(iv) refers to each party's receipt of the "quantities" of hydrocarbons underlying its lands:

> **Recital 6. The following considerations have led Navy and Standard to conclude that the most desirable and effective means of protecting the Reserve and of assuring the maximum ultimate recovery of oil, gas, natural gasoline and associated hydrocarbons from the Reserve is to develop and operate all lands in the Reserve as a unit:**
>
> > **(d) The unit plan of development and operation as set out herein will:**
> >
> > > **(iv) Result in the eventual receipt by Navy and Standard, respectively, from the various commercially productive zones underlying the Reserve of the quantities of recoverable oil, gas, natural gasoline and associated hydrocarbons underlying their respective lands as of November 20, 1942.**

UPC Recital 6(d)(iv) (emphasis added). Accordingly, it is clear that the UPC intended that percentage participations be based on the quantities of recoverable hydrocarbons, rather than their economic or thermal value.

Moreover, the UPC requires that the methodology for calculating the percentage participations insure that, if the Unit were produced until the recoverable reserves were exhausted, each party would receive production in proportion to the volume of recoverable hydrocarbons underlying its lands as of 1942. The UPC does not contain a termination date and, therefore, could have continued until the production of all the recoverable reserves. Recital 6(d)(iv) states that the UPC "will [r]esult in the eventual receipt" by the parties of the "quantities" of recoverable hydrocarbons underlying their respective lands in 1942. Accordingly, percentage participations must be calculated in a way that achieves that result.

B. To Insure Each Party's Eventual Receipt of its 1942 Quantities of Recoverable Hydrocarbons, the Percentage Participations Must be Based on a Conversion Factor that Reflects the Prices Received for the Hydrocarbons

Since the purpose of the percentage participation was to insure each party's eventual receipt of its 1942 quantities of recoverable hydrocarbons, the conversion factor must likewise accomplish that purpose. To do that, the conversion factor must be based on the prices received for the Unit's production. If revenues from oil sold at price "P_o" and gas at price "P_g" are allocated based on a conversion factor other than "P_o:P_g," the revenues will not be allocated consistent with the percentage ownership of quantities of recoverable hydrocarbons that produced them. This is simple mathematics.

Consider a unitized property with reserves of 3 units of X and 3 units of Y. Owner 1 owns X; Owner 2 owns Y. In each of three successive years, a unit of X and a unit of Y are produced. The sale price of X is $1. The sale price of Y is $.07 in the first year, $.12 in the second, and $.20 in the third, for a weighted average price of $.13 per unit. Thus, total revenues are $3.39. If units of Y are converted into units of "X equivalents" based on the relationship of the X and Y sale price at the time of sale (or of the weighted average price over the time of production), then Y=.13X. Use of a conversion factor that is not based on the weighted average price of production will yield revenues for an owner that are more than, or less than, the revenues received for that owner's portion of the reserves. For example, if the conversion factor is based only on relative first year prices, then Y=.07X, and Owner 1 receives more than the $3 he is entitled to receive. If the conversion factor is based only on relative third year prices, then Y=.2X, and Owner 1 receives less than the $3 he is entitled to receive.

A more specific example involves a unitized property with 10 barrels of recoverable oil reserves and 10 thousand cubic feet (mcf) of recoverable gas reserves. Owner 1 owns 70 percent of the oil and 80 percent of the gas, and Owner 2 owns 30 percent of the oil and 20 percent of the gas. Assume that the unit produces and sells all of the recoverable reserves – 10 barrels of oil at $1 per barrel, and 10 mcf of gas at $.10 per mcf, producing $11 in actual revenues. Owner 1 would be entitled to $7.80 ($7 for 7 barrels of oil and $.80 for 8 mcf of gas) and Owner 2 would be entitled to $3.20 ($3 for 3 barrels of oil and $.20 for 2 mcf of gas). The

conversion of gas into oil based on the ratio of their respective sale prices yields the same result. Using the 10 to 1 conversion factor ($1 per barrel ÷ $.10 per mcf), the unit's reserves, at unit inception, are 11 BOEs. Owner 1 owns 7.8 BOEs (7 BOEs attributable to oil and .8 BOEs attributable to gas), his percentage participation is 70.9 percent (7.8/11), and upon sale he receives $7.80. Owner 2 owns 3.2 BOEs (3 BOEs attributable to oil and .2 BOEs attributable to gas), his percentage participation is 29.1 percent (3.2/11), and he receives $3.20. On the other hand, if gas is converted into oil based on a ratio of 15 to 1, Owner 1's share drops and Owner 2's rises;[2] if gas is converted into oil based on a ratio of 5 to 1, Owner 1's share rises and Owner 2's share decreases.[3] Although these percentages are small, they are significant when they are applied to a property with large revenues.

Based on the foregoing, it is clear that using sale prices limited to a specific date, *e.g.*, November 20, 1942, or a specific time period, *e.g.*, 1996-1998, will not result in each party's eventual receipt of its 1942 volumes of recoverable reserves and, therefore, not the percentage participations provided for in the UPC. Using 1942 prices, when gas had little value, as a benchmark to allocate oil and gas revenues during periods of significant gas production later at much higher prices, deprives the federal government of revenues attributable to its gas reserves. Conversely, using 1996-1998 prices, if gas had a high value relative to oil, deprives ChevronTexaco of revenues attributable to its oil reserves during periods when gas had a lower relative price.

We recognize that the foregoing approach requires adjustment of the conversion factor over the life of the Unit. As explained above, however, it is the only approach that will produce a percentage participation that, over the course of production of the

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[2]If gas reserves are converted to oil using a 15 to 1 ratio, the unit's reserves are 10.67 BOEs: Owner 1 owns 7.54 BOEs (7 BOEs attributable to oil and .54 BOEs attributable to gas), his share is 70.7 percent (7.54/10.67); and he receives $7.78; Owner 2 owns 3.13 BOEs (3 BOEs attributable to oil and .13 BOEs attributable to gas), his share is 29.3 percent (3.13/10.67), and he receives $3.22.

[3]If gas reserves are converted to oil using a 5 to 1 ratio, the unit's reserves are 12 BOEs. Owner 1 owns 8.6 BOEs (7 BOEs attributable to oil and 1.6 BOEs attributable to gas), his share is 71.7 percent (8.6/12); and he receives $7.89; Owner 2 owns 3.4 BOEs (3 BOEs attributable to oil and .4 BOEs attributable to gas), his share is 28.3 percent (3.4/12), and he receives $3.11.

recoverable reserves "will [r]esult in the eventual receipt by [the parties] ... of the quantities" of recoverable hydrocarbons "underlying their respective lands as of November 20, 1942." As explained below, the parties' arguments ignore the foregoing and are inconsistent with the UPC.

C. The Parties' Arguments

1. ChevronTexaco's Arguments

ChevronTexaco's principal argument is that the references in the UPC to "November 20, 1942" require that the gas conversion factor be based on November 20, 1942 prices, i.e., 1942 economic value. As explained above, the UPC requires that percentage participations be based on the parties' respective "acre-feet" or "quantities" of recoverable hydrocarbons. UPC § 2(b); UPC Recital 6(d)(iv). Accordingly, ChevronTexaco's argument that the UPC requires conversion based on 1942 economic value directly conflicts with the UPC.

ChevronTexaco also argues that the UPC requires that the gas conversion factor be based on relative 1942 prices because any other interpretation would conflict with Section 2(f) of the UPC, which concerns redeterminations. ChevronTexaco argues that Section 2(f) does not permit redeterminations for post-November 20, 1942 economic events and, therefore, supports its argument that the UPC requires conversion based on 1942 prices.

Contrary to ChevronTexaco's argument, Section 2(f) does not prohibit redeterminations based on post-November 20, 1942 economic events. Section 2(f) provides:

> The initial or any subsequently established percentage participations in the production from any commercially productive zone underlying lands in the Reserve shall be subject to revision from time to time in the manner hereinafter set forth. Whenever Navy or Standard is of the opinion that consideration should be given to revision of such percentages, it shall notify the other thereof in writing. The Engineering Committee shall promptly examine and review all available data, and if the Committee finds that any one or more of the following exist:
>
> > (1) The presence, as of November 20, 1942, of commercially productive oil and/or gas bearing formations

> extending beyond the Estimated Limiting Line of Commercial Productivity for any zone;
>
> (2) The absence or exhaustion, as of November 20, 1942, of commercially productive oil and/or gas bearing formations within the Estimated Limiting Line of Commercial Productivity for any zone;
>
> (3) A variation, as of November 20, 1942, from the acre-feet of commercially productive oil and/or gas bearing formations previously estimated to be contained within the Estimated Limiting Line of Commercial Productivity for any zone;
>
> (4) A variation, as of November 20, 1942, from the acre-feet of commercially productive oil and/or gas bearing formations previously estimated to underlie the respective lands of Navy and Standard; or
>
> (5) Any condition, fact or circumstance which will aid in a more accurate determination of the percentages as of November 20, 1942;
>
> said Committee shall thereupon determine, in accordance with the formula described in paragraph (b) of this Section 2, the revision, if any shall be made.

UPC § 2(f). The references in Subsections 1 through 4 to "commercially" productive zones necessarily take into account current production costs and sales prices. Subsection 5, which refers to "any condition, fact, or circumstance which will aid in a more accurate determination of the percentages as of November 20, 1942" is not limited to November 20, 1942 data and thus would permit redetermination to insure that each party receives revenues consistent with its 1942 quantities of recoverable hydrocarbons. Finally, any interpretation of Section 2(f) to the contrary is disfavored because it would be inconsistent with the clear requirement in Section 2(b) and Recital 6(d)(iv) that percentage participations be based on, and result in the parties' receipt of, the quantities of recoverable hydrocarbons underlying their respective lands as of 1942.

ChevronTexaco further argues that the parties' contemporaneous construction of the UPC supports its position. As an initial matter, we disagree with ChevronTexaco's argument that the parties have consistently construed the UPC to require conversion based on 1942 prices. The parties have considered other conversion

methods.[4] More importantly, however, what the parties have done in the past on this issue is not relevant since, as discussed above, the UPC requires a conversion method that results in the parties' eventual receipt of the quantities of recoverable hydrocarbons underlying their respective lands as of 1942, and the use of 1942 prices does not achieve that result.

Finally, ChevronTexaco argues that if the UPC does not require conversion based on 1942 prices, then the UPC does not permit conversion at all and the PDASFE should make separate equity determinations for oil and gas. We disagree. As an initial matter, we note that the use of separate percentages requires that unit costs be allocated to oil and to gas. The nature of oil field exploration, development and production makes this allocation difficult. In addition, the use of separate percentages affects the development of the field, as each party seeks to maximize its interests. The UPC does not provide for separate participating percentages for oil and gas. Instead, Section 2(d) of the UPC establishes single percentage participations for each zone, and the parties used single percentage participations over the life of the Unit. Accordingly, the establishment of separate oil and gas percentages would be inconsistent with the UPC and the parties' practice.

2. The PDASFE's Arguments

The PDASFE argues that a gas conversion factor is acceptable if it is consistent with the UPC and sound oil engineering principles. The PDASFE argues that the UPC is silent on the conversion factor and Section 2(b)'s reference to the use of "weighting factors in accordance with sound oil engineering principles" applies to the conversion factor. The PDASFE argues that a conversion factor based on relative 1996-1998 prices is consistent with sound oil engineering principles because financial reports use relative current prices to compute the conversion factor.

The PDASFE ignores the UPC's requirement that each party receive its 1942 quantities of recoverable hydrocarbons. The PDASFE's

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4 In the third Stevens Zone redetermination, the Engineering Committee discussed using 1942 prices, 1980 prices, or thermal value, but rejected 1980 prices as "rapidly changing" and thermal value as having "no industry precedent … at this time." Chevron Brief, Exs. 13, 14. The Carneros Zone final determination used a conversion factor for the Carneros Zone based on thermal value. Although ChevronTexaco argues that the conversion factor was rendered moot by the determination that it had no interest in the zone, the fact remains that the thermal method was used.

reference to financial reports is inapposite. Financial reports attempt to state the current value of reserves and, therefore, use current prices. The proper allocation of revenues over the life of the Unit pursuant to the provisions of the UPC is a different issue. As explained above, as a matter of simple mathematics, the use of a conversion factor that is divorced from the oil and gas selling prices producing the revenue being allocated does not allocate revenues consistent with the quantities of recoverable hydrocarbons underlying the parties' respective lands in 1942.

The PDASFE also argues that the use of 1996-1998 prices is reasonable because the 1996-1998 period is closer to the period of production than 1942 prices. The PDASFE is correct that use of 1942 prices to allocate revenues fails to reflect the subsequent increased relative price, and increased sales, of gas. However, the PDASFE does not go far enough. The use of relative prices frozen at ANY time does not produce a percentage participation that allocates revenue consistent with the ownership of the hydrocarbons producing that revenue. In any event, the PDASFE's argument implicitly recognizes that the use of prices contemporaneous with production yields the proper allocation of revenues and, therefore, the proper percentage participations.

Finally, the PDASFE argues that the use of relative thermal value is an appropriate conversion factor because it is used in financial reporting and does not change over time. We cannot accept this argument. The inherent heating value of oil and gas has no fixed relationship over time to the prices received for production and, hence, will not allocate production consistent with the quantities of recoverable hydrocarbons underlying the parties' respective lands in 1942.

D. The Calculation of the Conversion Factor

As indicated above, the UPC requires that the gas conversion factor be based on the prices of gas and oil over the life of the Unit. Accordingly, we are remanding the Determination to the PDASFE with instructions to (i) recalculate the conversion factor, (ii) provide supporting data and calculations to ChevronTexaco, (iii) consider ChevronTexaco objections to the recalculation, and (iv) issue a final equity determination that incorporates the new conversion factor. As part of the remand, the PDASFE should prepare a schedule with the following information:

(a) the Unit's revenues in each month,

(b) the Unit's revenues in each month as a percentage of total revenues,
(c) the per barrel price of oil in each month,
(d) the per thousand cubic feet price of gas in each month,
(e) the ratio of the price of gas to oil in each month,
(f) the result of multiplying (b) times (e), and
(g) the sum of the entries in column (f)

Item (g) is a conversion factor based on the weight-averaged monthly relative price of gas and oil. If the PDASFE determines that for technical reasons Item (g) is not the most accurate weight-averaged conversion factor, the PDASFE should explain why. In any event, ChevronTexaco may appeal to this Office any determination reached by the PDASFE.

III. SUMMARY AND CONCLUSION

The UPC requires single percentage participations for each party for each zone, which allocate revenues in a manner that results in the parties' eventual receipt of their respective 1942 quantities of recoverable hydrocarbons. Mathematically, this requires a conversion factor based on actual selling prices received over the life of the Unit's production of oil and gas. For that reason, we reject ChevronTexaco's argument that the UPC requires conversion of gas reserves to BOEs based only on November 20, 1942 prices, as well as its alternate argument that the UPC does not permit conversion. For the same reason, we reject the PDASFE's use of 1996-1998 prices and thermal values as inconsistent with the UPC. Accordingly, we are remanding the matter to the PDASFE for a recalculation of the gas conversion factor based on the price of gas and oil over the life of the Unit.

IT IS THEREFORE ORDERED THAT:

(1) The Appeal filed by Chevron USA Inc. on June 15, 2003 be and hereby is granted as set forth below.

(2) The *Decision Finalizing Participating Percentages in Production from the Stevens Zone, Naval Petroleum Reserve No. 1* (June 2002) (the Determination) did not convert gas reserves to barrel-of-oil equivalents (BOEs) consistent with the Unit Plan Contract.

(3) The Determination is reversed and remanded to the Principal Deputy Assistant Secretary for Fossil Energy for further

consideration and issuance of a new determination consistent with the provisions of Paragraphs (4) and (5) below.

(4) The methodology used to convert gas reserves to BOEs shall be consistent with the Unit Plan Contract's provision that each party share in the volume of hydrocarbons produced over the life of the Unit based on its share of the volume of the recoverable hydrocarbons underlying their lands as of November 20, 1942.

(5) Gas reserves shall be converted to BOEs based on a weighted average of the ratios of the prices of gas and oil over the life of the Unit.

(6) The new determination issued pursuant to Paragraph (3) of this Decision and Order is appealable to this Office.

(7) This Order is not subject to judicial review.

George B. Breznay
Director
Office of Hearings and Appeals

Date: January 31, 2005